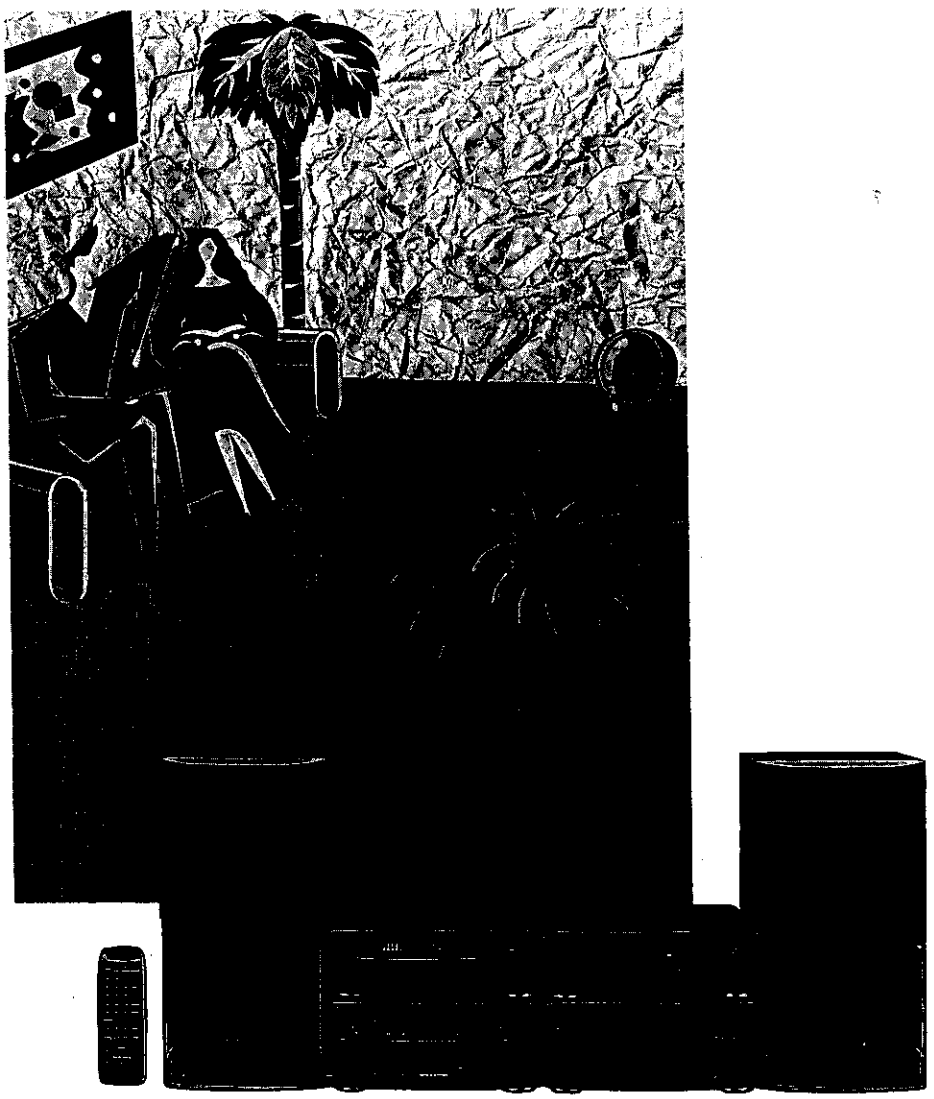
Technics®

CD Stereo System

SC-CH510

Operating Instructions



Note:
The "EB" indication shown on the outside packing case indicates United Kingdom.

Before connecting, operating or adjusting this product, please read these instructions completely.

COMPACT disc DIGITAL AUDIO

EB GN

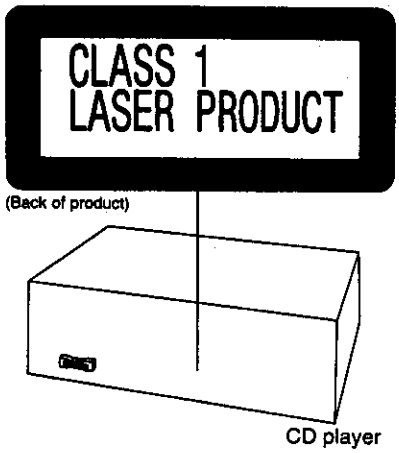
RQT2589-B

Dear customer

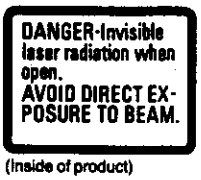
Thank you for purchasing this product.
For optimum performance and safety, please read these operating instructions carefully.

These operating instructions are applicable to the following systems.

System	Amplifier	Tuner/sound processor	CD player	Cassette deck	Speakers
SC-CH510	SE-CH510	ST-CH510	SL-CH510	RS-CH510	SB-CH510A



(Back of product)



(Inside of product)

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

CD player

Suggestions for Safety

■ Use a standard AC wall outlet

1. **Use from an AC power source of high voltage, such as that used for an air conditioner, is very dangerous.**
   A fire might be caused by such a connection.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Never place heavy items on top of the power supply cord, nor force it to bend sharply.**

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc.
Be careful that curtains and similar materials do not obstruct the ventilation holes.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.
In places where there is excessive vibration or humidity.
Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is inclined, a malfunction may result.

■ Never attempt to repair nor reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

If the unit is left for a long time with the power ON, this not only will shorten its useful operation life, but also may cause other trouble.

■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if an abnormal odour or smoke is detected, immediately disconnect the power cord plug, and contact with your dealer or an Authorized Service Center.

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Supplied accessories

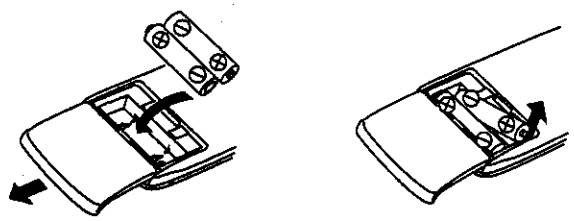
- AC mains lead ..... 1 pc.
  (For United Kingdom: RJA0042-P or VJA0733)
  (For Australia and New Zealand: RJA0036-K)
- Remote control transmitter (RAK-CH144WH) ..... 1 pc.
- Flat cable (long) (REX0511) ..... 1 pc.
- Flat cable (short) (REX0608) ..... 1 pc.
- AM loop antenna, antenna holder, screw (RSA0012) .... 1 pc.
- FM indoor antenna (RSA0007) ..... 1 pc.
- Attachment plug (SJP9009) ..... 1 pc.
  (For United Kingdom only)
- Speaker cords (REE0499) ..... 2 pcs.
- Remote control batteries (UM-4, "AAA", R03) ..... 2 pcs.
- Antenna plug (RFE0014) ..... 1 pc.
  (Supplied only for Australia and New Zealand)

Concerning the remote control

Battery installation

Insert the batteries in the correct polarities (⊕, ⊖).

To remove the batteries, pull out the ⊕ side.



Use of batteries

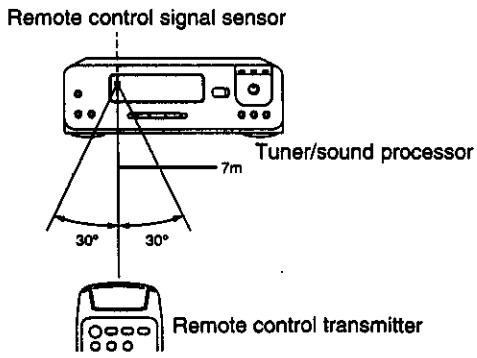
- Do not mix old and new batteries, or batteries of different types (manganese and alkaline, etc.).
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- Do not attempt to recharge alkaline or manganese batteries.

Battery life

The battery life is about one year.

- The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.

Correct method of use



Operation notes

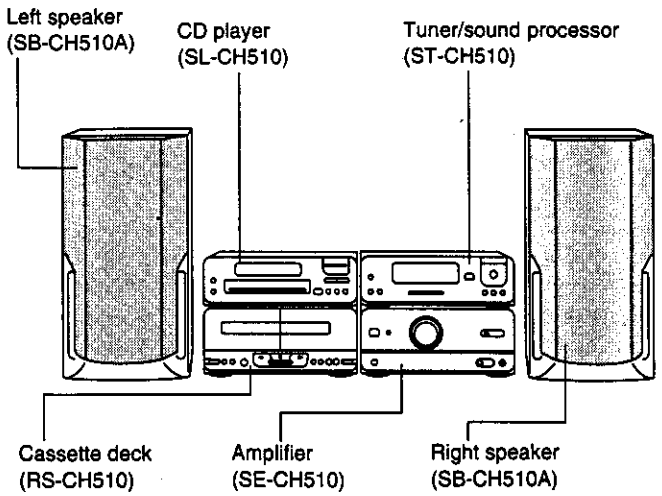
- Aim the remote control's transmission window toward the unit's sensor. Avoid any obstacles.
- Be sure the transmission window and the unit's sensor are free from dust. Excessive dust might affect its performance.
- The operation may not be correct if direct sunlight or other strong light source strikes the receiving sensor of this unit. If there is a problem, place the unit away from the light source.
- If this system is installed in a rack with glass doors, the glass doors' thickness or colour might make it necessary to use the remote control a shorter distance from the system.
- Never place heavy items.
- Do not disassemble or reconstruct.
- Do not spill water or other liquids.

Installation

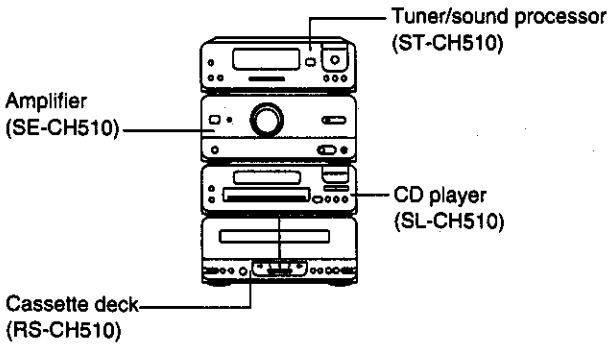
Stacking the components

Install the various components as shown in the illustration.

Horizontal stacking

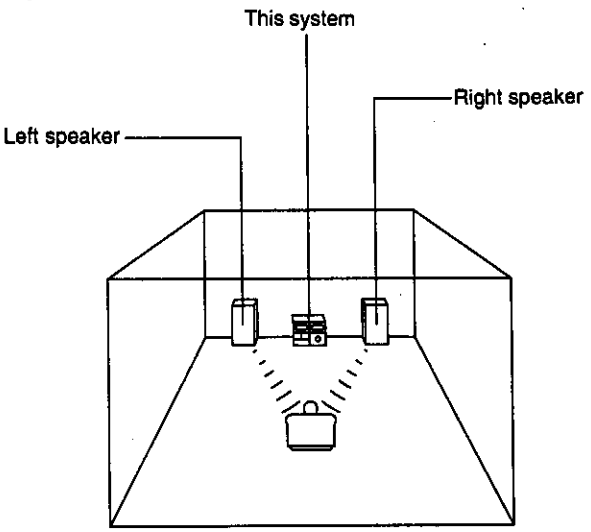


Vertical stacking

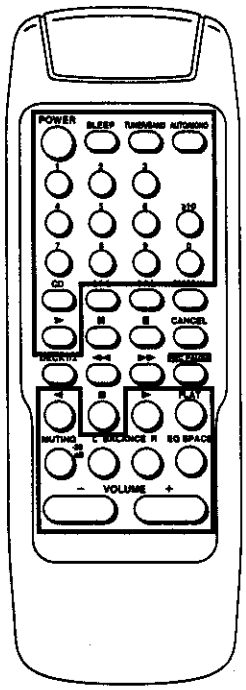


System layout example

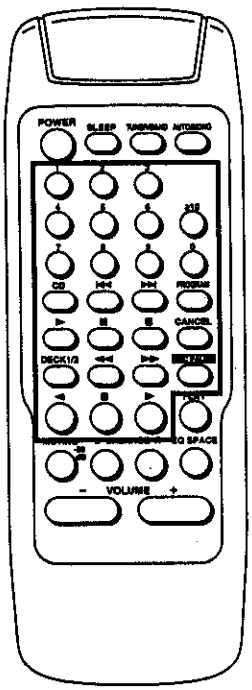
To produce a better stereo sound, install both speakers away from the system.



Quick reference of remote control operations



Common operation	
Switching the system on and power standby mode	POWER
Starting play directly from the power standby condition	TUNER/BAND, ▶, ◀ ▶
Selecting the input source	TUNER/BAND, CD
Adjusting the volume	− VOLUME +
Adjusting the left-right volume balance	L BALANCE R
Muting the volume temporarily	MUTING -20 dB
Tuner/timer operation	
Listening to the radio broadcasts	TUNER/BAND → 1 2 3 4 5 6 7 8 9 ×10
Switching between FM stereo mode and monaural	AUTO/MONO
Operating/releasing the sleep timer	SLEEP
Tone control section	
Switching between equalization curve and simulated listening environments	EQ SPACE
Switching equalization curve or simulated listening environment to off	FLAT



Compact disc section	
Starting play	
Temporarily stopping play	
Stopping play	
Skipping tracks	
Starting play from a particular track	CD →
Playing the particular track you programmed	CD → PROGRAM →
Cancelling the particular track you programmed	CD → CANCEL → CANCEL
Tape section	
Switching between deck 1 and deck 2	DECK1/2
Starting playback	
Finding the beginning of a track	(During playback)
Fast forwarding or rewinding the tape	(In stop mode)
Stopping playback and recording	
Recording	REC PAUSE →

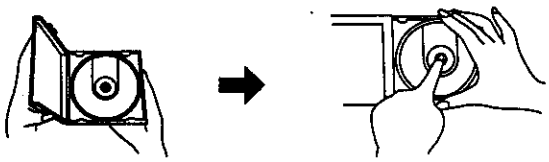
Concerning compact discs

Only compact discs having the mark can be used with the unit.

COMPACT disc DIGITAL AUDIO

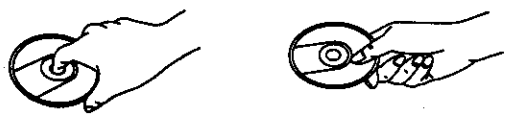
■ To remove a disc from its case

Press the center holder and lift the disc holding by the edges.



■ To hold the disc

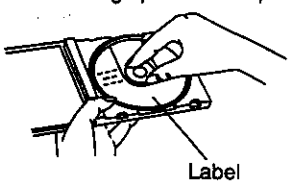
Hold the disc by the edges so the surface is not soiled with fingerprints.
Fingerprints, dirt and scratches can cause skipping and distortion.



(Correct) (Incorrect)

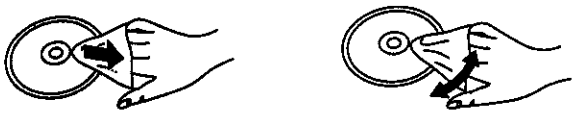
■ To store a disc in its case

Insert the disc with label facing upwards and press downward at the center.



■ If the surface is soiled

Wipe gently with a soft, damp (water only) cloth.



(Correct) (Incorrect)

■ If the disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe this moisture off with a soft, dry, lint-free cloth before using the disc.

Improper disc storage:

You can damage discs if you store them in the following places;
- Areas exposed to direct sunlight
- Humid or dusty areas
- Areas directly exposed to a heat outlet or heating appliance

Handling precautions:

- Do not write on the label side with a ball-point pen or other writing utensils.
- Do not use record cleaning sprays, benzene, thinner, static electricity prevention liquids or any other solvent.
- Do not soil with fingerprints.

Concerning cassette tapes

■ Selection of cassette tapes

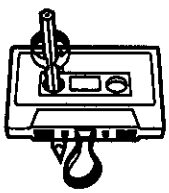
You can use normal, chrome, and metal tapes for recording:
- The deck automatically identifies the kind of tape loaded, and sets the bias (for recording) and equalization accordingly.
- The deck automatically sets the recording level.

Cassette tape exceeding 90 minutes:
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping, starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the machine.

Do not use the Fe-Cr tapes (TYPE III) in this system:
If you use this tape, it is impossible to obtain the required flat frequency response.

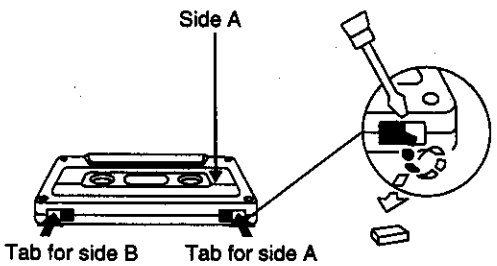
■ If the tape loosens, take up the slack

Tape slack may cause the tape to break.

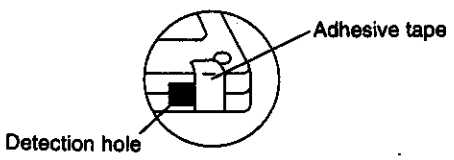


■ To prevent erasure of recorded sounds

Remove the tabs with a screwdriver or a similar object.



To re-record on a protected cassette, cover the slot with adhesive tape.



Do not cover the detection holes on chrome and metal tapes.

Improper tape storage:

You can damage tapes if you store them in the following places;
- In high temperature (35°C or higher) or high humidity (80% or higher) areas
- In a strong magnetic field (near a speaker, on top of a TV, etc.) This can erase a recording.
- Areas exposed to direct sunlight

Troubleshooting guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
Problems common to all systems		
There is no sound when the power is ON.	Volume is set too low.	Adjust the volume level with the volume control on the amplifier.
The location of the various musical instruments is not well defined.	The (+) and (−) connections to one of the speakers are reversed.	Connect the speaker cord correctly.
The left and right sounds are reversed.	The left and right connections to the speaker are reversed.	Connect the speaker cords correctly.
When listening to the external unit, the left and right sounds are reversed.	The left and right connections to the external unit are reversed.	Connect the external unit's cord correctly.
Only one speaker is emitting sound.	One of the wires of the speaker cord is disconnected.	Connect the speaker cord correctly.
There is no sound when a source is being played.	The (+) and (−) wire of the speaker cords are shorted.	Switch the system to the standby mode, and reconnect the speaker cords so that they are not shorted. Then switch on the power.
"U-70" display appears on the CD player or tuner/ sound processor display.	Flat cables are not connected steadily.	Connect the flat cable steadily.
While listening to FM broadcasts		
There is a "rushing noise" during a stereo broadcast which is not audible during a monaural broadcast.	The transmitting station is a long distance away.	●If you are using an indoor antenna, change to an outdoor antenna. ●If you are using a high-grade outdoor antenna, try changing the installation location, height, and orientation.
You hear excessive noise during a stereo broadcast, and occasionally the sound disappears.	The installation location and orientation of the antenna are unsuitable.	
The stereo indicator flickers and does not light completely.	The transmitting station is a long distance away.	
	The power of the TV set or VCR is ON.	Try switching off the TV set or VCR.
The sound during a stereo broadcast is highly distorted.	There is a building or mountain nearby. [Distortion is caused by interference between the signal from the transmitting station (direct wave) and the signal reflected from the building or mountain (reflected wave).]	Use a high-grade outdoor antenna, and install it in a good location, height, and orientation for reception.
While listening to MW/LW broadcasts		
You hear an unusual beat sound.	You are using the system at the same time you are playing a TV set.	Switch off the TV set, or use the system further away from it.
You hear a low-frequency hum.	The antenna wire is near the mains lead.	Separate the antenna wire from the mains lead.

THIS TUNER/RECEIVER IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY TUNERS AND RECEIVERS CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO TUNER/RECEIVER.

Problem	Probable cause(s)	Suggested remedy
When there is a television set nearby		
The picture on the TV disappears or stripes appear on the screen.	The location and orientation of the antenna are incorrect.	If you are using an indoor antenna, change to an outdoor antenna.
	The wiring at the back of the system is unsuitable.	Separate the antenna wire of the TV set from the system.
While listening to tapes		
Sound is low, intermittent,or poor quality, noisy, scratchy, or unsteady.	Heads are dirty.	Clean the heads.
	Dolby noise reductions is set in the wrong position.	Set it to match the Dolby NR recording mode.
The deck does not enter the recording mode.	The erase-prevention tabs are removed from the cassette.	Attach tape to cover the space left by removal of the erase-prevention tabs.
DOLBY NR indicators and REVERSE MODE indicators begin to flash simultaneously, and the cassette deck become incapable of operation.	Malfunction might occur in the cassette deck section.	Contact with your dealer or an Authorized Service Center.
While listening to compact discs		
The display will not show the correct indication. Disc play does not start when you press the play button.	The disc is not positioned correctly in the disc tray.	Load the disc on the tray correctly.
	The disc is loaded upside down.	Reload the disc.
	The disc is dirty.	Wipe the disc with a soft cloth.
	The disc is scratched.	Replace the disc with a new one.
	The disc is badly warped.	
	The disc is a nonstandard one.	Replace the disc with a different one.
	There is condensation inside the compact disc player.	Switch the power ON, and then wait for 60 minutes before using the compact disc player.
While using the remote control		
The system cannot be operated with the remote control.	The batteries are installed in the reverse polarity.	Re-insert the batteries in the correct polarity.
	The batteries are worn.	Replace the batteries with new batteries.

The servicer will require all components to service your system.
Therefore, should service ever be necessary, be sure to bring the entire system.

Maintenance

■ Maintenance of external surfaces

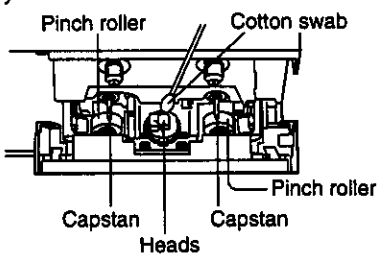
To clean this unit, use a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

Wring the cloth well before wiping the unit.
Wipe once again with a soft, dry cloth.
Never use alcohol, paint thinner, benzene, or chemically treated cloths to clean this unit. Such chemicals may damage the finish of your system.

■ Tape head care

To assure sound quality for recording and playback, be sure to clean the tape heads after approximately every 10 hours of use.

1. Press POWER on the amplifier to ON.
2. Press ▲ OPEN to open the cassette holder.
3. Press POWER on the amplifier and CLOSE at the same time.
   The system will go into power standby mode leaving the cassette holder open.
4. Clean the tape heads, pinch rollers and the capstan shafts with a cotton swab (or a soft, lint-free cloth) slightly moistened with isopropyl alcohol.
   Do not use any solution other than alcohol for head cleaning.



Technical specifications

TUNER/SOUND PROCESSOR

■ Pre-amplifier section

Input sensitivity/Impedance
- **(For United Kingdom)**
  - **PHONO** 2.5 mV/47 kΩ
  - **DCC** 250 mV/15 kΩ
- **(For Australia and New Zealand)**
  - **DCC** 250 mV/15 kΩ
  - **AUX** 250 mV/15 kΩ

Output level
- **DCC RECOUT** 150 mV/1.5 kΩ

Frequency response
- **(For United Kingdom)**
  - **DCC** 30 Hz–20 kHz
  - **PHONO** 30 Hz–15 kHz/+1.5 to −2.0 dB
- **(For Australia and New Zealand)**
  - **DCC** 30 Hz–20 kHz
  - **AUX** 30 Hz–20 kHz

■ EQ, SPACE section

Center frequency 200, 1 k, 7 k(Hz)

Fixed mode 5 modes (HALL, HEAVY, CLEAR, CAR, HP ST)

■ FM tuner section

Frequency range 87.50–108.00 MHz (0.05 MHz steps)
Sensitivity 1.8 µV (IHF usable)
- **S/N 26 dB** 1.5 µV

S/N MONO 70 dB (75 dB, IHF)
Stereo separation 1 kHz 35 dB
Antenna terminal(s) 75Ω (unbalance)

■ AM tuner section

Frequency range
- **MW** 522–1611 kHz (9 kHz steps) 530–1620 Hz (10 kHz steps)
- **LW** 144–288 kHz (9 kHz steps)

Sensitivity (S/N 20 dB)
- **MW** 500 µV/m
- **LW** 50 µV

■ Timer section

Clock Quartz-lock type
Function 24-hour programmable; Play timer (1 time), Rec timer (1 time), Sleep (120 min., 1 min. intervals)
Setting 1 minute–23 hours 59 minutes (1 min. intervals)

■ General

Dimensions (W×H×D) 270×89×274 mm
Weight 1.75 kg

AMPLIFIER

Power output
- **DIN 1 kHz, THD 1%, both channel driven** 2×35 W (6Ω)

Total harmonic distortion
- **Rated power at 1 kHz** 1% (6Ω)
- **Half power at 1 kHz** 0.09% (6Ω)

Load impedance
- **MAIN** 6Ω

S/N (rated power)
- **MAIN** 84 dB

Frequency response
- **MAIN** 40 Hz–30 kHz

■ General

Power consumption 128 W
Power supply 230–240 V, AC 50/60 Hz
Dimensions (W×H×D) 270×118.5×339.5 mm
Weight 4.2 kg

CD PLAYER

■ Audio

DA converter 1 bit 2 DAC MASH

■ Pickup

Wavelength 780 nm

■ General

Dimensions (W×H×D) 270×89×266 mm
Weight 1.9 kg

CASSETTE DECK

Deck system Stereo cassette deck
Track system 4 track, 2 channel
Recording system AC bias
- **Bias frequency** 80 kHz

Erasing system AC erase
Heads
- **Deck 1**
- **(Playback head)** Permalloy head
- **Deck 2**
- **(Recording/Playback head)** Permalloy head
- **(Erasing head)** Double gap ferrite head

Motors
- **Deck 1, 2**
  - **Capstan drive** DC servo motor
  - **Reel table drive** DC motor

Tape speed 4.8 cm/sec
Wow and flutter 0.1% (WRMS)
Fast forward and rewind times Approx. 50 seconds with C-60 cassette tape

Frequency response
- **(Dolby NR off, CCRT on)**
  - **NORMAL** 20 Hz–17 kHz 30 Hz–15 kHz (0 dB to −7 dB, DIN)
  - **CrO_2** 20 Hz–18 kHz 30 Hz–17 kHz (0 dB to −7 dB, DIN)
  - **METAL** 20 Hz–20 kHz 30 Hz–19 kHz (0 dB to −7 dB, DIN)

S/N (Signal level=max recording level, CrO_2)
- **NR off** 56 dB (A weighted)
- **Dolby NR on** 66 dB (CCIR)

■ General

Dimensions (W×H×D) 270×118.5×263 mm
Weight 2.85 kg

SPEAKER SYSTEM

Type 3 way, 3 speakers BASS-REF
Speaker(s)
- **Woofer** 14 cm cone type
- **Midrange** 6 cm cone type
- **Tweeter** Piezo type

Impedance 6Ω
Input power 70 W (music), 35 W (DIN)
Output sound pressure level 84 dB/W (1.0 m)
Cross over frequency 3.3 kHz, 10 kHz
Frequency range 42 Hz–22 kHz (−16 dB) 49 Hz–20 kHz (−10 dB)

■ General

Dimensions (W×H×D) 210×414×244 mm
Weight 4.3 kg

Notes:
1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

MASH is a trademark of NTT.

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